APPENDIX IV: DELPHI SURVEY—ROUND III

The following table contains a list of those indicators scored or nominated by the Delphi III survey participants. Scoring was based on a scale of 1 to 5, with 1 being unimportant and 5 being highly important. The scores were then averaged across all responses, yielding the score seen in the right-hand column of the table. Participants were also invited to add indicators they deemed important that did not appear on the original list to score. These responses have a score of 0.0.

Indicator	Score
AIR	
Loading chemical species in snowpacks	3.85
Atmospheric deposition of sulfur	3.78
Acid neutralizing capacity in headwater lakes	3.54
Accumulation of toxic air contaminants in biota	3.52
Change in visibility deciviews	3.52
Atmospheric deposition on nitrogenv	3.46
Loss of forest productivity	3.46
Ozone exposure index--W126	3.14
Nitrogen concentration in streams during spring snowmelt	3.00
Number of days with smoke	2.48
Human health-related air quality	0.00
Emission rates of key gases to the atmosphere over Yellowstone NP.	0.00
Environmental contaminants	0.00
AQUATIC	
Aquatic species at risk	4.16
Native fish community structure, composition, stability	4.14
Native aquatic macroinvertebrate diversity/richness	4.14
Aquatic habitat loss and degradation	4.00
Exotic fish community structure, composition, stability	3.72
Lake phytoplankton & zooplankton community assemblages	3.60
Exotic aquatic macroinvertebrate diversity/richness	3.50
Aquatic disease & pathogen prevalence, contagion, vulnerability	3.40
Stream periphyton and zoobenthos community assemblages	3.30
Spawning fish vital rates	3.25
Critical food abundance, distribution and stability in aquatic habitats	3.00
Aquatic/terrestrial trophic relationships	0.00
Wetland birds	0.00
Hot spring microorganism	0.00
Genetic integrity of native fishes	0.00
Aquatic sediment fossil records of all types.	0.00
Fish (native & alien) population abundance, distribution, and vital rates	0.00
Wetland vegetation communities	0.00
CLIMATE	
Total precipitation	4.29
Stream flow patterns	3.61
Plant phenology	3.50
Extreme hydrologic events	3.43
Snow water equivalence of snowpack	3.41
Number of days ground is snow-covered	3.40
Maximum air temperature	3.38
Date of "spring green-up"	3.32
Alpine/subalpine climatic conditions & micro-environment	3.29
Minimum air temperature	3.29
Snow covered area	3.24
Soil moisture	3.13
Period of lake ice cover	3.10
Extent of frozen ground	3.00

Indicator	Score
Surface UV	2.96
Date of lake overturn	2.95
Soil temperature	2.77
Number of severe storms	2.65
Photosynethically active radiation (PAR)	2.61
Number of rain-on-snow events	2.52
Number of cloudy days	2.50
GEOLOGY & GEOTHERMAL	
Earthquake activity	4.23
Geothermal water chemistry & temperature	4.13
Geothermal water flow rate	3.91
Geothermal feature abundance & distribution	3.78
Volcanic unrest	3.75
Contamination of thermal microbial populations	3.73
Active geological processes (e.g. slope failure, etc)	3.55
Thermal heat transfer	3.45
Geyser eruption volume & rate	3.24
Native microbial populations	0.00
Paleontological Resources	0.00
Fumarole degassing	0.00
Annual sinter layering	0.00
Streamflow; stream channel morphology	0.00
HUMAN	
Landscape heterogeneity & habitat fragmentation	3.96
Winter use activities (snowmobiles, skiers, other winter recreationists)	3.93
Land use--land cover	3.62
Secure wildlife habitat	3.61
Human-wildlife interaction (habituation)	3.54
Hydrologic modification (dams, diversions, return flow)	3.54
Sound quality	3.52
Visitor experience and satisfaction	3.36
Backcountry overnight use (people, stock, & boat use nights)	3.32
Backcountry day use (hikers, stock users, boaters, anglers, etc.)	3.16
Bio-prospecting	3.00
Road-killed wildlife	2.88
road corridor impacts	0.00
Night Sky Pollution	0.00
Urban develop near park and in wildlife corridors	0.00

Indicator	Score
INVERTEBRATES	
Critical habitat abundance, distribution & stability	3.68
Insect biodiversity	3.64
Insect herbivory	3.08
Insect biomass	2.88
Disease in terrestrial invertebrate communities	2.64
links between vertebrates and invertebrates and the changes in the landscape	0.00
Exotic insects	0.00
Insect species distribution	0.00
Invertebrate (all groups) diversity and distribution	0.00
SOIL	
Below-ground biomass	3.83
Hydrothermal soil chemistry	3.75
Soil chemistry (nitrogen, organic matter)	3.25
Soil structure and stability	3.25
Soil biodiversity	3.23
Cryptobiotic crust integrity	3.08
Soil and sediment erosion	2.92
VEGETATION	
Exotic terrestrial plant species diversity/richness	4.30
Whitebark pine ecology, distribution, mortality, recruitment	4.03
Native terrestrial plant species diversity/richness	4.00
Wetland vegetation community structure & composition	3.82
Aspen distribution, growth & recruitment	3.69
Grassland & shrub steppe community structure & composition	3.66
Willow – cottonwood community structure & composition	3.63
Alpine/ subalpine community structure & composition	3.58
Wetland species at risk	3.53
Vegetation chemistry	3.46
Forest community structure & composition	3.41
Fire and fuel loading	3.38
Quality and diversity of sagebrush habitat	3.28
Riparian vegetation community structure & composition	3.21
Taxonomy & distribution of aquatic vegetation	3.11
Browse community structure & composition	3.10
Net primary productivity	3.09
Beaver dam wetland community structure & composition	3.09

Indicator	Score
Desert shrub community structure and composition	3.00
Stream bank stability	2.97
Tree line elevation	2.92
Floodplain development	2.90
Sediment deposition in depressional wetlands	2.58
Juniper community structure & composition	2.56
Impacts of livestock grazing	0.00
Bryophytes	0.00
Distribution of exotic plant diseases	0.00
Bark beetle trends	0.00
Impacts of browsing by ungulates	0.00
Demographics of selected plants	0.00
Cushion plant community species richness and diversity	0.00
Lichen abundance and distribution	0.00
Area occupied by rare or declining plant community types	0.00
Plant disease trends	0.00